

SEQUENCE LISTING

<110> Stamler, Jonathan S.
 Gow, Andrew J.
 Singel, David J.

<120> Method for Determining Physiological
 Effects of Hemoglobin

<130> 1818.1030-003

<150> PCT/US00/21101

<151> 2000-08-02

<150> US60/146,680

<151> 1999-08-02

<160> 4

<170> FastSEQ for Windows Version 4.0

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<211> 11

<212> PRT

<213> Homo sapiens

<400> 1

Met Glu Glu Leu Gln Asp Asp Tyr Glu Asp Glu
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<210> 2

<211> 911

<212> PRT

<213> Homo sapiens

<400> 2

Met Glu Glu Leu Gln Asp Asp Tyr Glu Asp Met Met Glu Glu Asn Leu
 1 5 10 15
 Glu Gln Glu Glu Tyr Glu Asp Pro Asp Ile Pro Glu Ser Gln Met Glu
 20 25 30
 Glu Pro Ala Ala His Asp Thr Glu Ala Thr Ala Thr Asp Tyr His Thr
 35 40 45
 Thr Ser His Pro Gly Thr His Lys Val Tyr Val Glu Leu Gln Glu Leu
 50 55 60
 Val Met Asp Glu Lys Asn Gln Glu Leu Arg Trp Met Glu Ala Ala Arg
 65 70 75 80
 Trp Val Gln Leu Glu Glu Asn Leu Gly Glu Asn Gly Ala Trp Gly Arg
 85 90 95
 Pro His Leu Ser His Leu Thr Phe Trp Ser Leu Leu Glu Leu Arg Arg
 100 105 110
 Val Phe Thr Lys Gly Thr Val Leu Leu Asp Leu Gln Glu Thr Ser Leu
 115 120 125
 Ala Gly Val Ala Asn Gln Leu Leu Asp Arg Phe Ile Phe Glu Asp Gln
 130 135 140
 Ile Arg Pro Gln Asp Arg Glu Glu Leu Leu Arg Ala Leu Leu Leu Lys
 145 150 155 160

| | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| His | Ser | His | Ala | Gly | Glu | Leu | Glu | Ala | Leu | Gly | Gly | Val | Lys | Pro | Ala |
| | | | | 165 | | | | | 170 | | | | | 175 | |
| Val | Leu | Thr | Arg | Ser | Gly | Asp | Pro | Ser | Gln | Pro | Leu | Leu | Pro | Gln | His |
| | | | 180 | | | | | 185 | | | | | 190 | | |
| Ser | Ser | Leu | Glu | Thr | Gln | Leu | Phe | Cys | Glu | Gln | Gly | Asp | Gly | Gly | Thr |
| | | 195 | | | | | 200 | | | | | 205 | | | |
| Glu | Gly | His | Ser | Pro | Ser | Gly | Ile | Leu | Glu | Lys | Ile | Pro | Pro | Asp | Ser |
| | 210 | | | | | 215 | | | | | 220 | | | | |
| Glu | Ala | Thr | Leu | Val | Leu | Val | Gly | Arg | Ala | Asp | Phe | Leu | Glu | Gln | Pro |
| 225 | | | | | 230 | | | | | 235 | | | | | 240 |
| Val | Leu | Gly | Phe | Val | Arg | Leu | Gln | Glu | Ala | Ala | Glu | Leu | Glu | Ala | Val |
| | | | 245 | | | | | | 250 | | | | | 255 | |
| Glu | Leu | Pro | Val | Pro | Ile | Arg | Phe | Leu | Phe | Val | Leu | Leu | Gly | Pro | Glu |
| | | | 260 | | | | | 265 | | | | | 270 | | |
| Ala | Pro | His | Ile | Asp | Tyr | Thr | Gln | Leu | Gly | Arg | Ala | Ala | Ala | Thr | Leu |
| | | 275 | | | | | 280 | | | | | 285 | | | |
| Met | Ser | Glu | Arg | Val | Phe | Arg | Ile | Asp | Ala | Tyr | Met | Ala | Gln | Ser | Arg |
| | 290 | | | | | 295 | | | | | 300 | | | | |
| Gly | Glu | Leu | Leu | His | Ser | Leu | Glu | Gly | Phe | Leu | Asp | Cys | Ser | Leu | Val |
| 305 | | | | | 310 | | | | | 315 | | | | | 320 |
| Leu | Pro | Pro | Thr | Asp | Ala | Pro | Ser | Glu | Gln | Ala | Leu | Leu | Ser | Leu | Val |
| | | | | 325 | | | | | 330 | | | | | 335 | |
| Pro | Val | Gln | Arg | Glu | Leu | Leu | Arg | Arg | Arg | Tyr | Gln | Ser | Ser | Pro | Ala |
| | | | 340 | | | | | 345 | | | | | 350 | | |
| Lys | Pro | Asp | Ser | Ser | Phe | Tyr | Lys | Gly | Leu | Asp | Leu | Asn | Gly | Gly | Pro |
| | | 355 | | | | | 360 | | | | | 365 | | | |
| Asp | Asp | Pro | Leu | Gln | Gln | Thr | Gly | Gln | Leu | Phe | Gly | Gly | Leu | Val | Arg |
| | 370 | | | | | 375 | | | | | 380 | | | | |
| Asp | Ile | Arg | Arg | Arg | Tyr | Pro | Tyr | Tyr | Leu | Ser | Asp | Ile | Thr | Asp | Ala |
| 385 | | | | | 390 | | | | | 395 | | | | | 400 |
| Phe | Ser | Pro | Gln | Val | Leu | Ala | Ala | Val | Ile | Phe | Ile | Tyr | Phe | Ala | Ala |
| | | | | 405 | | | | | 410 | | | | | 415 | |
| Leu | Ser | Pro | Ala | Ile | Thr | Phe | Gly | Gly | Leu | Leu | Gly | Glu | Lys | Thr | Arg |
| | | | 420 | | | | | 425 | | | | | 430 | | |
| Asn | Gln | Met | Gly | Val | Ser | Glu | Leu | Leu | Ile | Ser | Thr | Ala | Val | Gln | Gly |
| | | 435 | | | | | 440 | | | | | 445 | | | |
| Ile | Leu | Phe | Ala | Leu | Leu | Gly | Ala | Gln | Pro | Leu | Leu | Val | Val | Gly | Phe |
| | 450 | | | | | 455 | | | | | 460 | | | | |
| Ser | Gly | Pro | Leu | Leu | Val | Phe | Glu | Glu | Ala | Phe | Phe | Ser | Phe | Cys | Glu |
| 465 | | | | | 470 | | | | | 475 | | | | | 480 |
| Thr | Asn | Gly | Leu | Glu | Tyr | Ile | Val | Gly | Arg | Val | Trp | Ile | Gly | Phe | Trp |
| | | | | 485 | | | | | 490 | | | | | 495 | |
| Leu | Ile | Leu | Leu | Val | Val | Leu | Val | Val | Ala | Phe | Glu | Gly | Ser | Phe | Leu |
| | | | 500 | | | | | 505 | | | | | 510 | | |
| Val | Arg | | | | | | | | | | | | | | |

Gln Asp Thr Tyr Thr Gln Lys Leu Ser Val Pro Asp Gly Phe Lys Val
 625 630 635 640
 Ser Asn Ser Ser Ala Arg Gly Trp Val Ile His Pro Leu Gly Leu Arg
 645 650 655
 Ser Glu Phe Pro Ile Trp Met Met Phe Ala Ser Ala Leu Pro Ala Leu
 660 665 670
 Leu Val Phe Ile Leu Ile Phe Leu Glu Ser Gln Ile Thr Thr Leu Ile
 675 680 685
 Val Ser Lys Pro Glu Arg Lys Met Val Lys Gly Ser Gly Phe His Leu
 690 695 700
 Asp Leu Leu Leu Val Val Gly Met Gly Gly Val Ala Ala Leu Phe Gly
 705 710 715 720
 Met Pro Trp Leu Ser Ala Thr Thr Val Arg Ser Val Thr His Ala Asn
 725 730 735
 Ala Leu Thr Val Met Gly Lys Ala Ser Thr Pro Gly Ala Ala Ala Gln
 740 745 750
 Ile Gln Glu Val Lys Glu Gln Arg Ile Ser Gly Leu Leu Val Ala Val
 755 760 765
 Leu Val Gly Leu Ser Ile Leu Met Glu Pro Ile Leu Ser Arg Ile Pro
 770 775 780
 Leu Ala Val Leu Phe Gly Ile Phe Leu Tyr Met Gly Val Thr Ser Leu
 785 790 795 800
 Ser Gly Ile Gln Leu Phe Asp Arg Ile Leu Leu Leu Phe Lys Pro Pro
 805 810 815
 Lys Tyr His Pro Asp Val Pro Tyr Val Lys Arg Val Lys Thr Trp Arg
 820 825 830
 Met His Leu Phe Thr Gly Ile Gln Ile Ile Cys Leu Ala Val Leu Trp
 835 840 845
 Val Val Lys Ser Thr Pro Ala Ser Leu Ala Leu Pro Phe Val Leu Ile
 850 855 860
 Leu Thr Val Pro Leu Arg Arg Val Leu Leu Pro Leu Ile Phe Arg Asn
 865 870 875 880
 Val Glu Leu Gln Cys Leu Asp Ala Asp Asp Ala Lys Ala Thr Phe Asp
 885 890 895
 Glu Glu Glu Gly Arg Asp Glu Tyr Asp Glu Val Ala Met Pro Val
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<210> 3

<211> 201

<212> PRT

<213> Homo sapiens

<400> 3

Met Glu Glu Leu Gln Asp Asp Tyr Glu Asp Met Met Glu Glu Asn Leu
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 Glu Gln Glu Glu Tyr Glu Asp Pro Asp Ile Pro Glu Ser Gln Met Glu
 20 25 30
 Glu Pro Ala Ala His Asp Thr Glu Ala Thr Ala Thr Asp Tyr His Thr
 35 40 45
 Thr Ser His Pro Gly Thr His Lys Val Tyr Val Glu Leu Gln Glu Leu
 50 55 60
 Val Met Asp Glu Lys Asn Gln Glu Leu Arg Trp Met Glu Ala Ala Arg
 65 70 75 80
 Trp Val Gln Leu Glu Glu Asn Leu Gly Glu Asn Gly Ala Trp Gly Arg
 85 90 95
 Pro His Leu Ser His Leu Thr Phe Trp Ser Leu Leu Glu Leu Arg Arg
 100 105 110

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Val Phe Thr Lys Gly Thr Val Leu Leu Asp Leu Gln Glu Thr Ser Leu
      115      120      125
Ala Gly Val Ala Asn Gln Leu Leu Asp Arg Phe Ile Phe Glu Asp Gln
      130      135      140
Ile Arg Pro Gln Asp Arg Glu Glu Leu Leu Arg Ala Leu Leu Leu Lys
145      150      155      160
His Ser His Ala Gly Glu Leu Glu Ala Leu Gly Gly Val Lys Pro Ala
      165      170      175
Val Leu Thr Arg Ser Gly Asp Pro Ser Gln Pro Leu Leu Pro Gln His
      180      185      190
Ser Ser Leu Glu Thr Gln Leu Phe Cys
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<210> 4
<211> 317
<212> PRT
<213> Homo sapiens

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Glu Gln Glu Glu Tyr Glu Asp Pro Asp Ile Pro Glu Ser Gln Met Glu
      20      25      30
Glu Pro Ala Ala His Asp Thr Glu Ala Thr Ala Thr Asp Tyr His Thr
      35      40      45
Thr Ser His Pro Gly Thr His Lys Val Tyr Val Glu Leu Gln Glu Leu
      50      55      60
Val Met Asp Glu Lys Asn Gln Glu Leu Arg Trp Met Glu Ala Ala Arg
      65      70      75      80
Trp Val Gln Leu Glu Glu Asn Leu Gly Glu Asn Gly Ala Trp Gly Arg
      85      90      95
Pro His Leu Ser His Leu Thr Phe Trp Ser Leu Leu Glu Leu Arg Arg
      100      105      110
Val Phe Thr Lys Gly Thr Val Leu Leu Asp Leu Gln Glu Thr Ser Leu
      115      120      125
Ala Gly Val Ala Asn Gln Leu Leu Asp Arg Phe Ile Phe Glu Asp Gln
      130      135      140
Ile Arg Pro Gln Asp Arg Glu Glu Leu Leu Arg Ala Leu Leu Leu Lys
145      150      155      160
His Ser His Ala Gly Glu Leu Glu Ala Leu Gly Gly Val Lys Pro Ala
      165      170      175
Val Leu Thr Arg Ser Gly Asp Pro Ser Gln Pro Leu Leu Pro Gln His
      180      185      190
Ser Ser Leu Glu Thr Gln Leu Phe Cys Glu Gln Gly Asp Gly Gly Thr
      195      200      205
Glu Gly His Ser Pro Ser Gly Ile Leu Glu Lys Ile Pro Pro Asp Ser
      210      215      220
Glu Ala Thr Leu Val Leu Val Gly Arg Ala Asp Phe Leu Glu Gln Pro
225      230      235      240
Val Leu Gly Phe Val Arg Leu Gln Glu Ala Ala Glu Leu Glu Ala Val
      245      250      255
Glu Leu Pro Val Pro Ile Arg Phe Leu Phe Val Leu Leu Gly Pro Glu
      260      265      270
Ala Pro His Ile Asp Tyr Thr Gln Leu Gly Arg Ala Ala Ala Thr Leu
      275      280      285
Met Ser Glu Arg Val Phe Arg Ile Asp Ala Tyr Met Ala Gln Ser Arg
      290      295      300

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Gly Glu Leu Leu His Ser Leu Glu Gly Phe Leu Asp Cys
305 310 315

[illegible]